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[54] **REDUCED MECHANICAL COUPLING INTERLINK FOR SPATIALLY EXTENDED HYDROPHONES**

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[58] **Field of Search** 367/149, 153, 367/154, 173

[56] **References Cited**

U.S. PATENT DOCUMENTS

5,737,278 4/1998 Frederick et al. 367/149

5,748,565 5/1998 Cherbettchian et al. 367/154

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[57] **ABSTRACT**

An interlink for connecting hydrophone elements that allows a single sensing fiber to transition from a first hydrophone element, across the interlink, to a second hydrophone element, while providing a secure connection between hydrophone elements without the disadvantages of mechanical resonances produced by a rigid interlink material. The interlink has a first end connected to a first hydrophone element, and a second end connected to a second hydrophone element. The interlink may be composed entirely of open cell foam, or a more rigid structure that is covered by open cell foam. Sensing fiber transitions from a first hydrophone element, onto the foam interlink, and thence onto a second hydrophone element, with only a change in winding angle. The sensing fiber is not susceptible to a rigid interlink structure and undesirable mechanical resonances.

5 Claims, 2 Drawing Sheets